FIG. 1

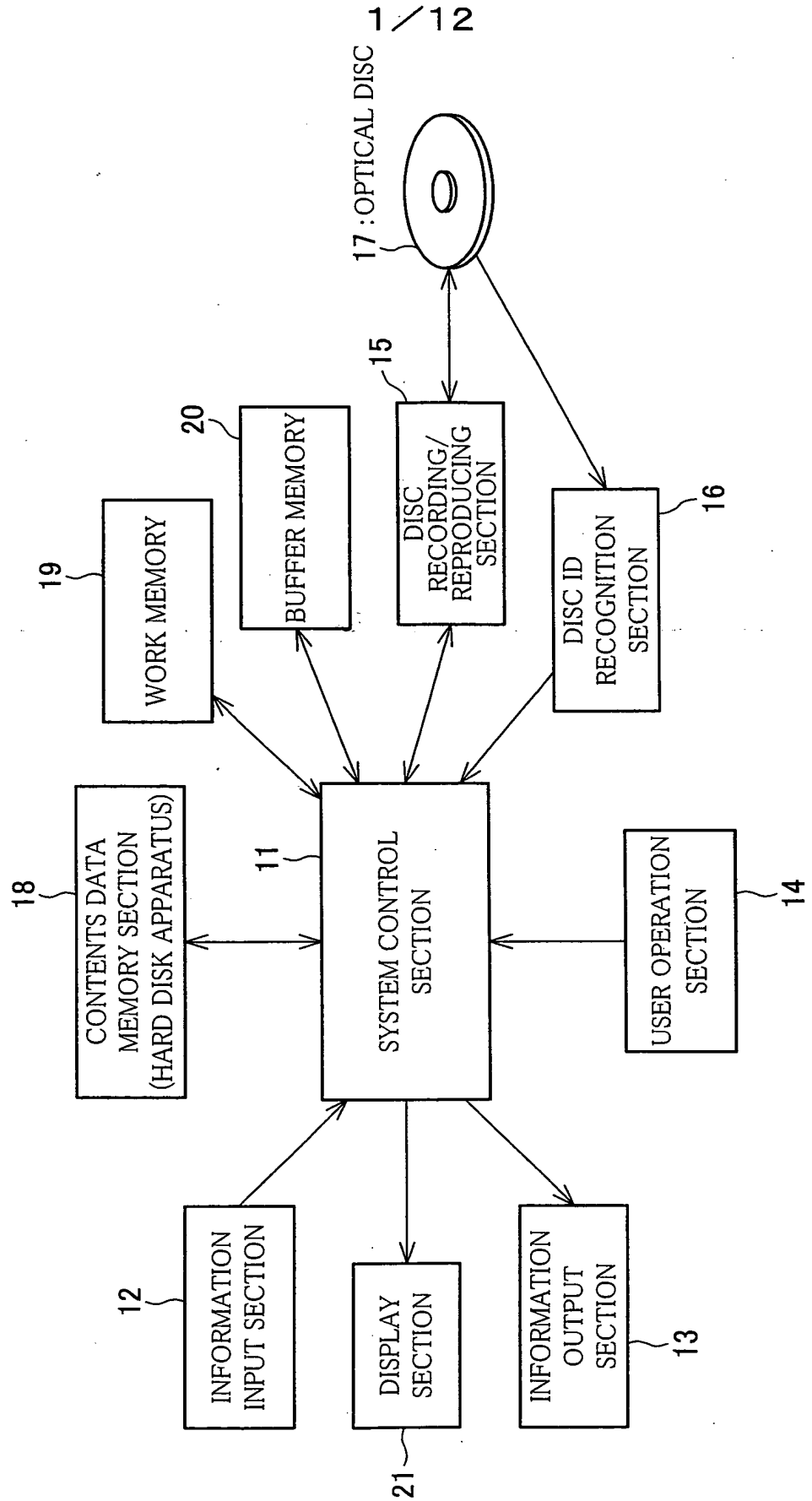

17 : OPTICAL DISC
15
DISC RECORDING/ REPRODUCING SECTION
20
BUFFER MEMORY
19
WORK MEMORY
DISC ID RECOGNITION SECTION
16
18
CONTENTS DATA MEMORY SECTION (HARD DISK APPARATUS)
11
SYSTEM CONTROL SECTION
USER OPERATION SECTION
14
12
INFORMATION INPUT SECTION
DISPLAY SECTION
21
INFORMATION OUTPUT SECTION
13

FIG. 2

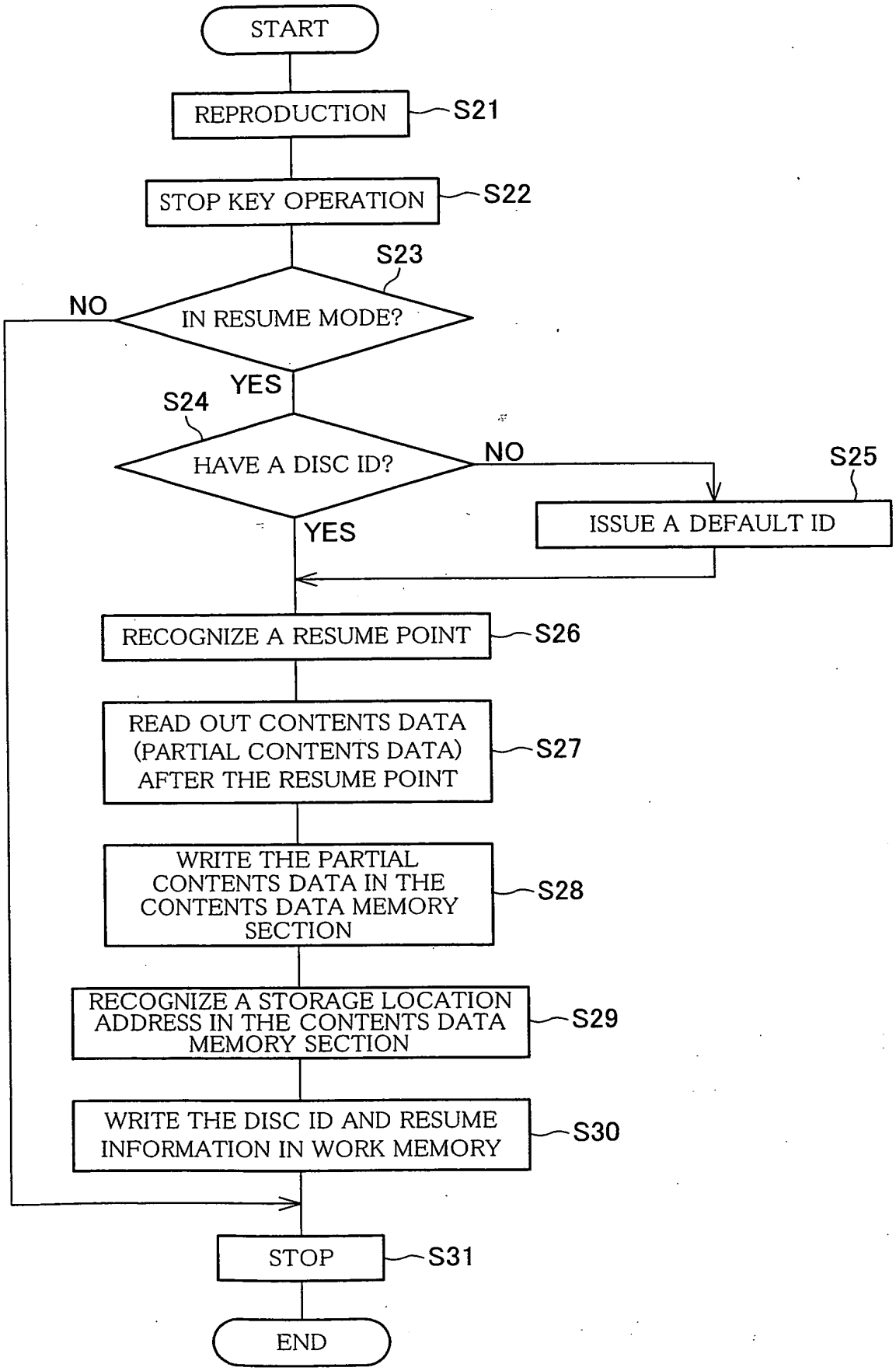

START
REPRODUCTION
S21
STOP KEY OPERATION
S22
S23
IN RESUME MODE?
NO
YES
S24
HAVE A DISC ID?
NO
S25
ISSUE A DEFAULT ID
YES
RECOGNIZE A RESUME POINT
S26
READ OUT CONTENTS DATA (PARTIAL CONTENTS DATA) AFTER THE RESUME POINT
S27
WRITE THE PARTIAL CONTENTS DATA IN THE CONTENTS DATA MEMORY SECTION
S28
RECOGNIZE A STORAGE LOCATION ADDRESS IN THE CONTENTS DATA MEMORY SECTION
S29
WRITE THE DISC ID AND RESUME INFORMATION IN WORK MEMORY
S30
STOP
S31
END

FIG. 3

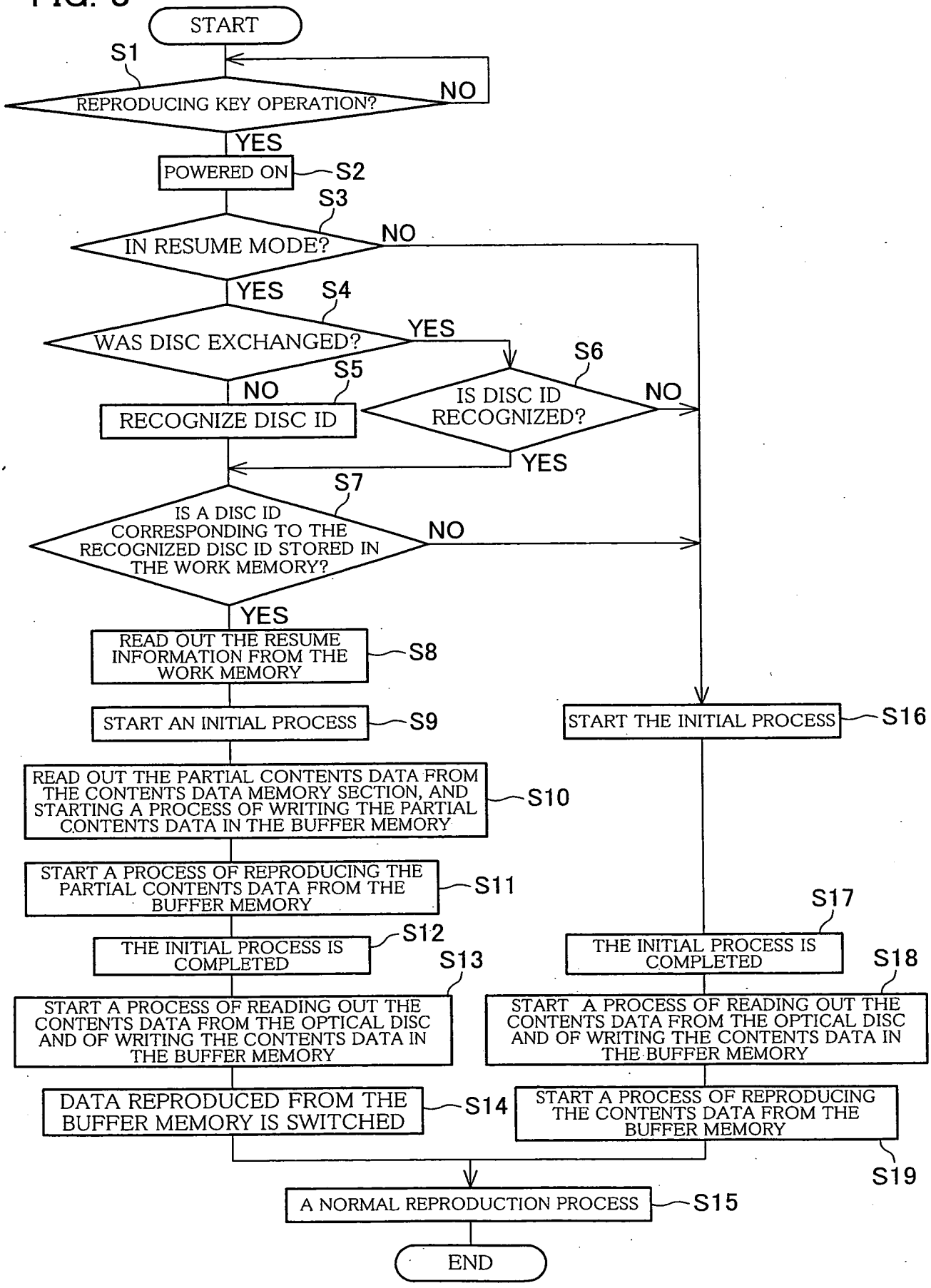

START
S1
REPRODUCING KEY OPERATION?
NO
YES
POWERED ON
S2
S3
IN RESUME MODE?
NO
YES
S4
WAS DISC EXCHANGED?
YES
S6
S5
NO
RECOGNIZE DISC ID
IS DISC ID RECOGNIZED?
NO
YES
S7
IS A DISC ID CORRESPONDING TO THE RECOGNIZED DISC ID STORED IN THE WORK MEMORY?
NO
YES
READ OUT THE RESUME INFORMATION FROM THE WORK MEMORY
S8
START AN INITIAL PROCESS
S9
START THE INITIAL PROCESS
S16
READ OUT THE PARTIAL CONTENTS DATA FROM THE CONTENTS DATA MEMORY SECTION, AND STARTING A PROCESS OF WRITING THE PARTIAL CONTENTS DATA IN THE BUFFER MEMORY
S10
START A PROCESS OF REPRODUCING THE PARTIAL CONTENTS DATA FROM THE BUFFER MEMORY
S11
S17
THE INITIAL PROCESS IS COMPLETED
S12
THE INITIAL PROCESS IS COMPLETED
S13
S18
START A PROCESS OF READING OUT THE CONTENTS DATA FROM THE OPTICAL DISC AND OF WRITING THE CONTENTS DATA IN THE BUFFER MEMORY
START A PROCESS OF READING OUT THE CONTENTS DATA FROM THE OPTICAL DISC AND OF WRITING THE CONTENTS DATA IN THE BUFFER MEMORY
DATA REPRODUCED FROM THE BUFFER MEMORY IS SWITCHED
S14
START A PROCESS OF REPRODUCING THE CONTENTS DATA FROM THE BUFFER MEMORY
S19
A NORMAL REPRODUCTION PROCESS
S15
END

FIG. 4

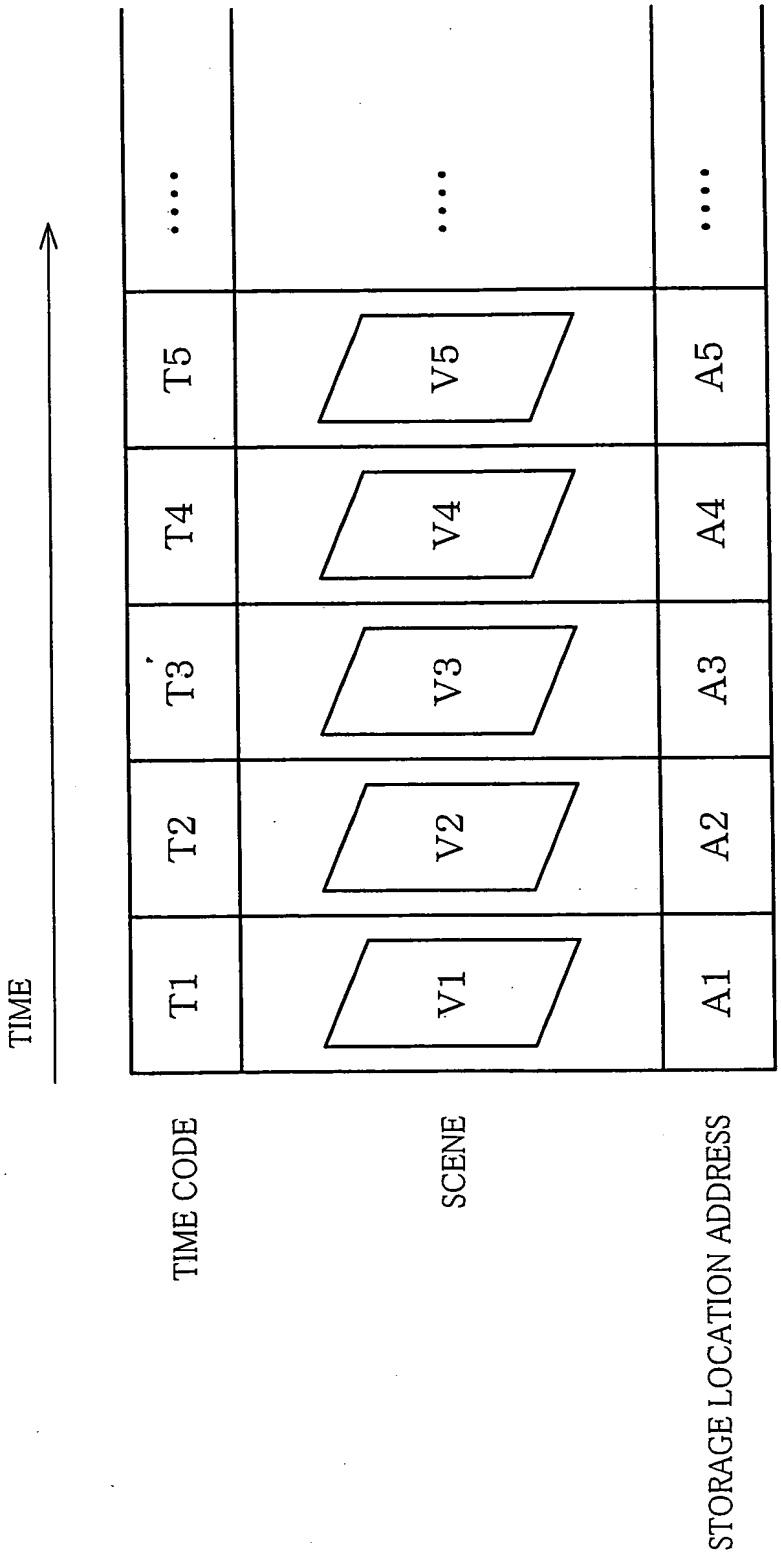

TIME
T1
T2
T3
T4
T5
....
V1
V2
V3
V4
V5
....
A1
A2
A3
A4
A5
....
TIME CODE
SCENE
STORAGE LOCATION ADDRESS

FIG. 5

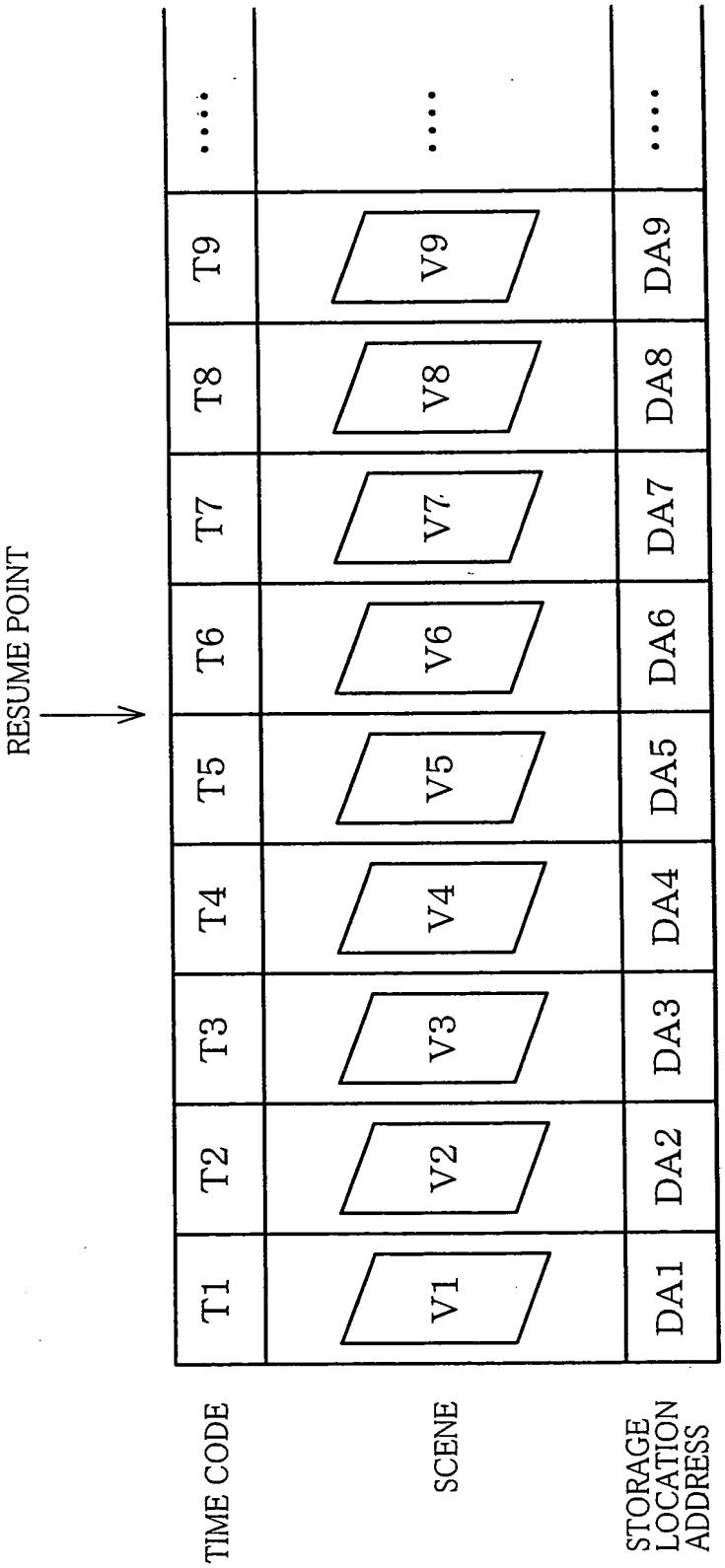

RESUME POINT
TIME CODE
SCENE
STORAGE LOCATION ADDRESS
T1
T2
T3
T4
T5
T6
T7
T8
T9
....
V1
V2
V3
V4
V5
V6
V7
V8
V9
....
DA1
DA2
DA3
DA4
DA5
DA6
DA7
DA8
DA9
....

FIG. 6

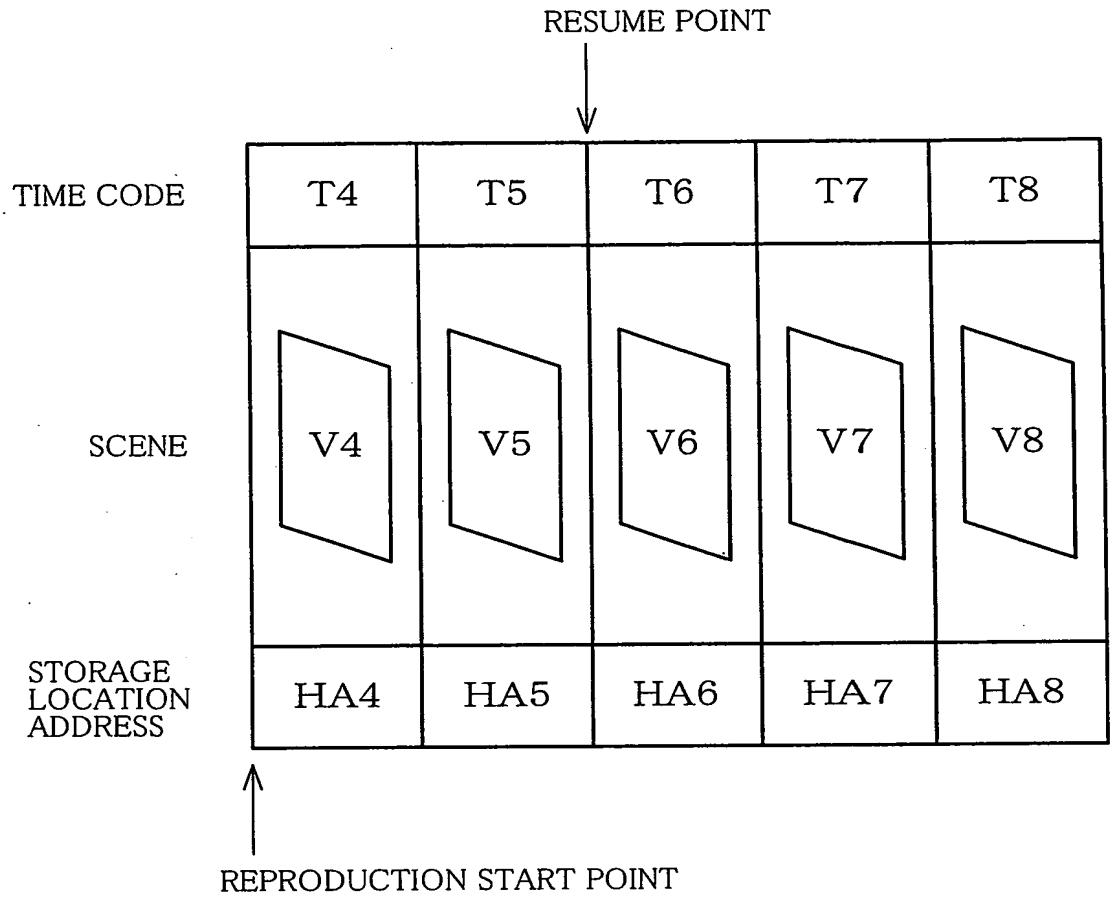

RESUME POINT
TIME CODE
T4
T5
T6
T7
T8
SCENE
V4
V5
V6
V7
V8
STORAGE LOCATION ADDRESS
HA4
HA5
HA6
HA7
HA8
REPRODUCTION START POINT

FIG. 7

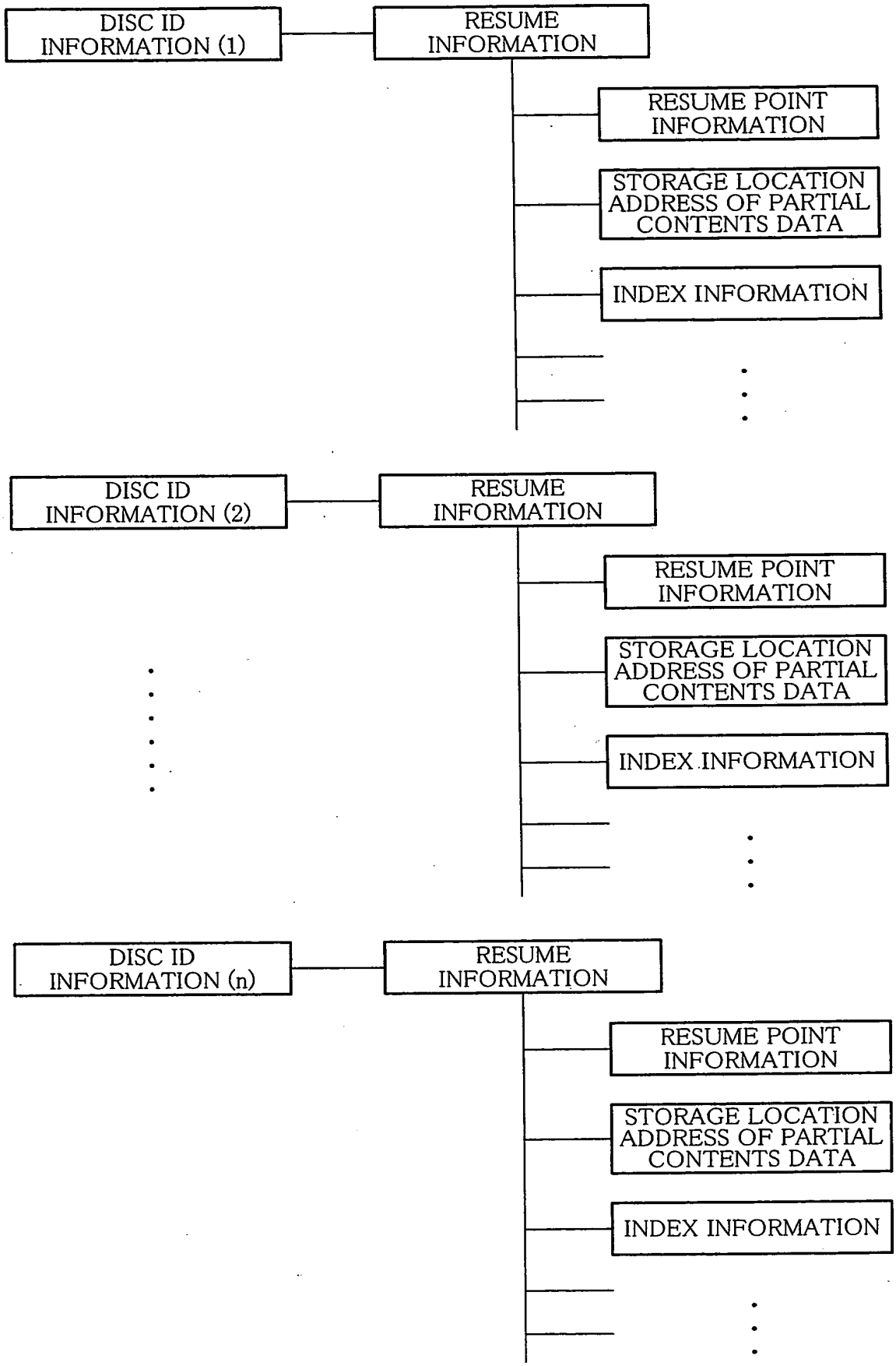

DISC ID INFORMATION (1)
RESUME INFORMATION
RESUME POINT INFORMATION
STORAGE LOCATION ADDRESS OF PARTIAL CONTENTS DATA
INDEX INFORMATION
DISC ID INFORMATION (2)
RESUME INFORMATION
RESUME POINT INFORMATION
STORAGE LOCATION ADDRESS OF PARTIAL CONTENTS DATA
INDEX INFORMATION
DISC ID INFORMATION (n)
RESUME INFORMATION
RESUME POINT INFORMATION
STORAGE LOCATION ADDRESS OF PARTIAL CONTENTS DATA
INDEX INFORMATION

FIG. 8

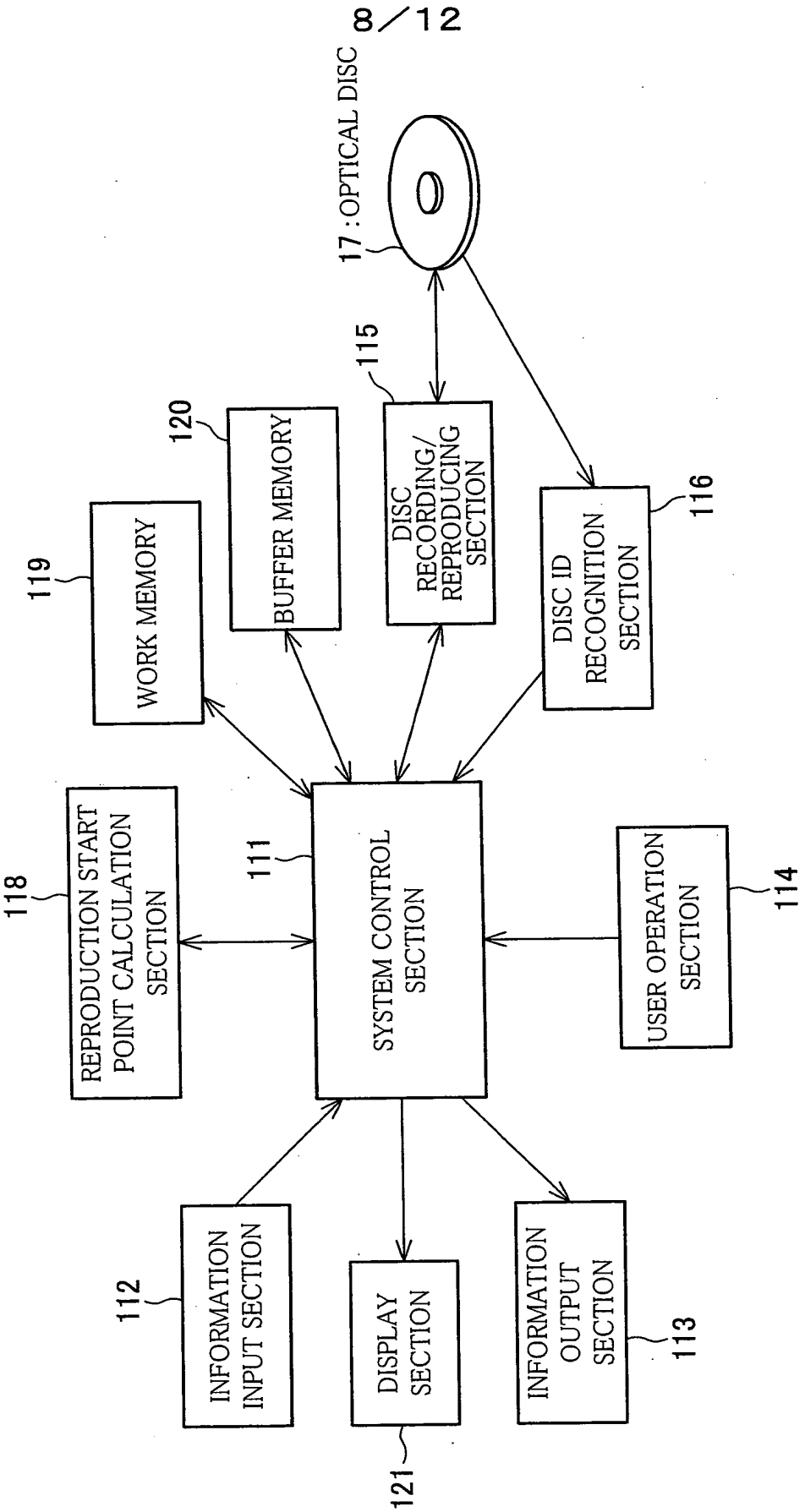

17 : OPTICAL DISC
115
DISC RECORDING/ REPRODUCING SECTION
120
BUFFER MEMORY
119
WORK MEMORY
DISC ID RECOGNITION SECTION
116
118
REPRODUCTION START POINT CALCULATION SECTION
111
SYSTEM CONTROL SECTION
USER OPERATION SECTION
114
112
INFORMATION INPUT SECTION
DISPLAY SECTION
121
INFORMATION OUTPUT SECTION
113

FIG. 9

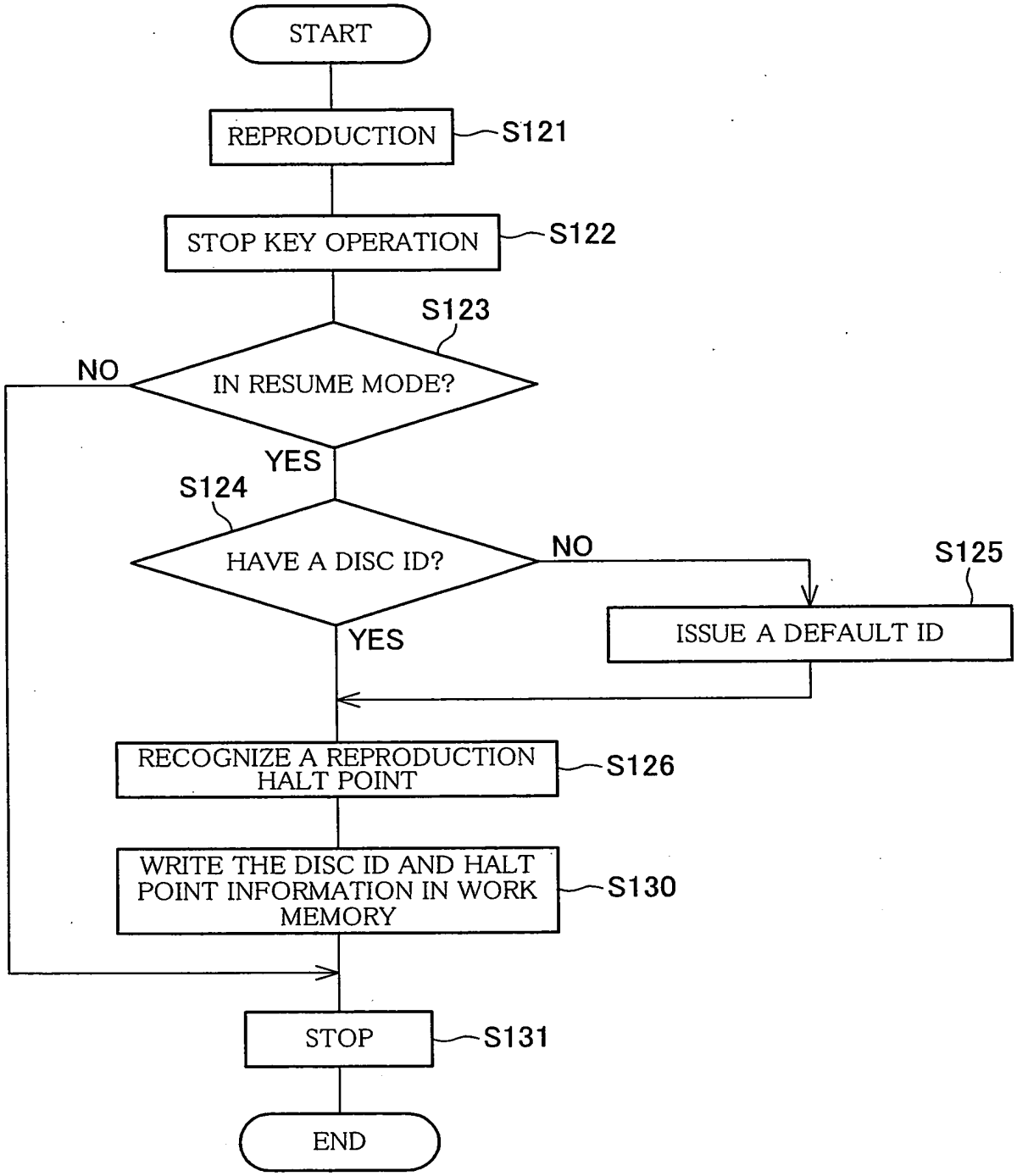

START
REPRODUCTION
S121
STOP KEY OPERATION
S122
S123
IN RESUME MODE?
NO
YES
S124
HAVE A DISC ID?
NO
S125
ISSUE A DEFAULT ID
YES
RECOGNIZE A REPRODUCTION HALT POINT
S126
WRITE THE DISC ID AND HALT POINT INFORMATION IN WORK MEMORY
S130
STOP
S131
END

FIG. 10

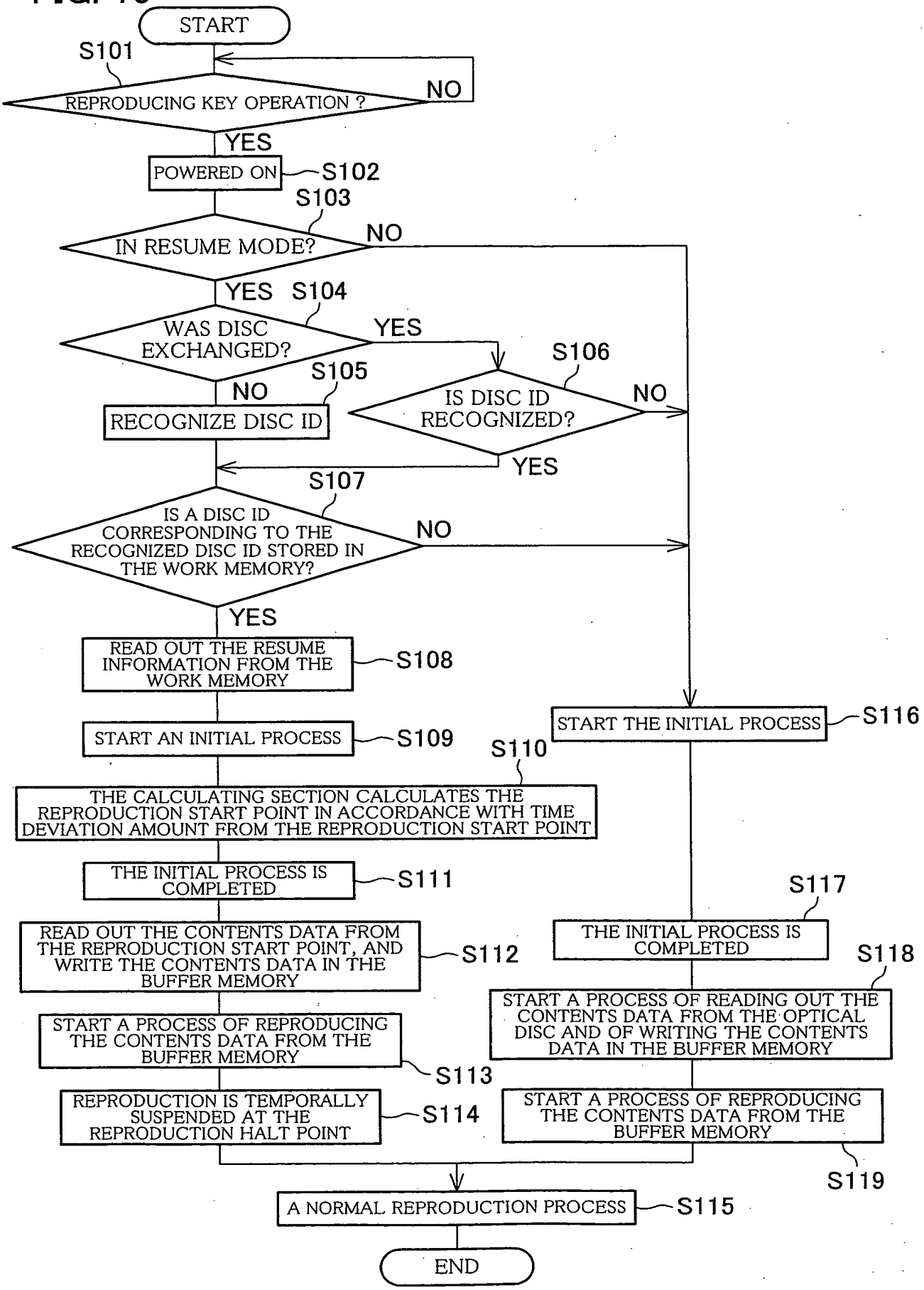

START
S101
REPRODUCING KEY OPERATION ?
NO
YES
POWERED ON
S102
S103
IN RESUME MODE?
NO
YES
S104
WAS DISC EXCHANGED?
YES
S106
S105
NO
RECOGNIZE DISC ID
IS DISC ID RECOGNIZED?
NO
YES
S107
IS A DISC ID CORRESPONDING TO THE RECOGNIZED DISC ID STORED IN THE WORK MEMORY?
NO
YES
READ OUT THE RESUME INFORMATION FROM THE WORK MEMORY
S108
START AN INITIAL PROCESS
S109
S110
THE CALCULATING SECTION CALCULATES THE REPRODUCTION START POINT IN ACCORDANCE WITH TIME DEVIATION AMOUNT FROM THE REPRODUCTION START POINT
THE INITIAL PROCESS IS COMPLETED
S111
READ OUT THE CONTENTS DATA FROM THE REPRODUCTION START POINT, AND WRITE THE CONTENTS DATA IN THE BUFFER MEMORY
S112
START A PROCESS OF REPRODUCING THE CONTENTS DATA FROM THE BUFFER MEMORY
S113
REPRODUCTION IS TEMPORALLY SUSPENDED AT THE REPRODUCTION HALT POINT
S114
START THE INITIAL PROCESS
S116
S117
THE INITIAL PROCESS IS COMPLETED
S118
START A PROCESS OF READING OUT THE CONTENTS DATA FROM THE OPTICAL DISC AND OF WRITING THE CONTENTS DATA IN THE BUFFER MEMORY
START A PROCESS OF REPRODUCING THE CONTENTS DATA FROM THE BUFFER MEMORY
S119
A NORMAL REPRODUCTION PROCESS
S115
END

FIG. 11

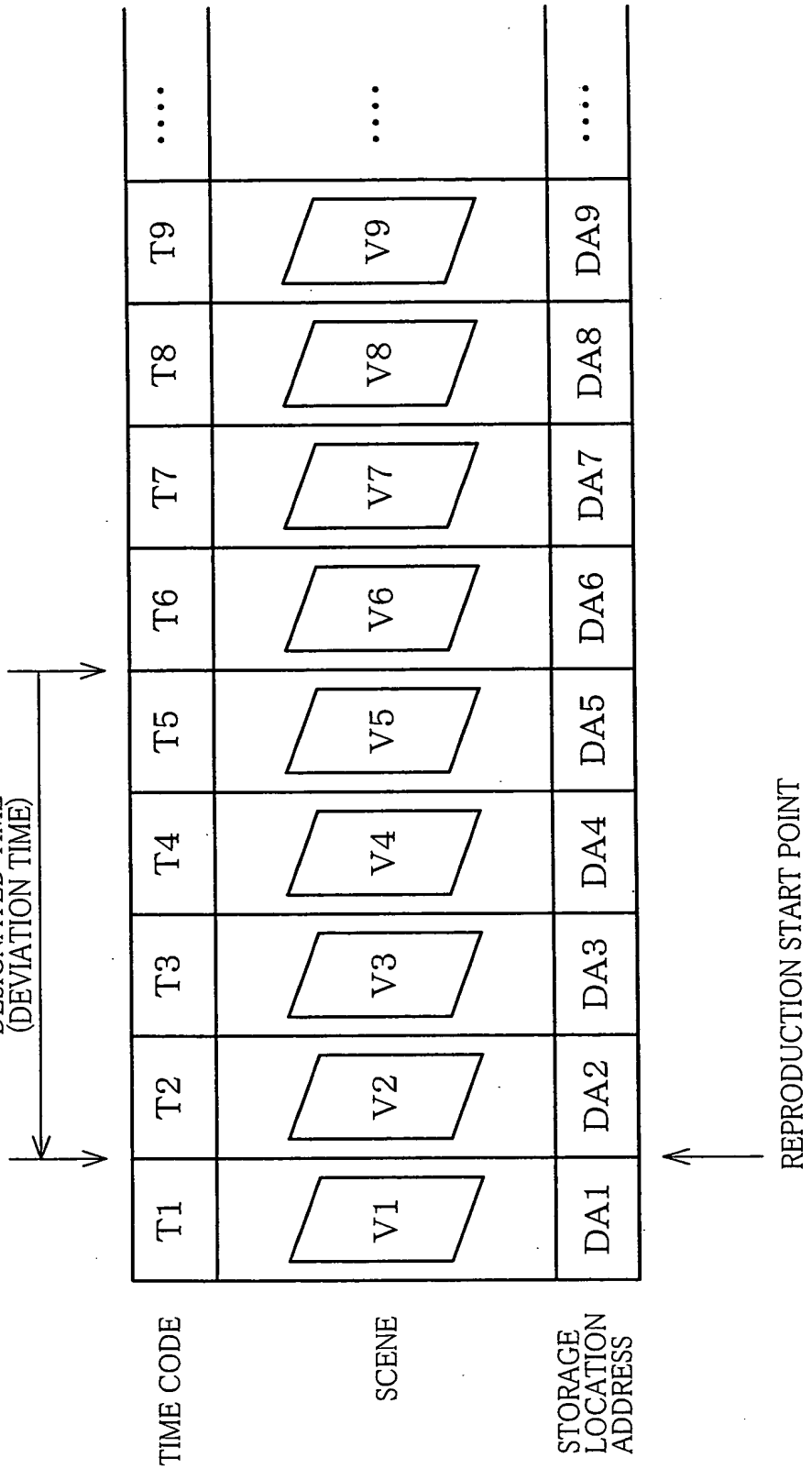
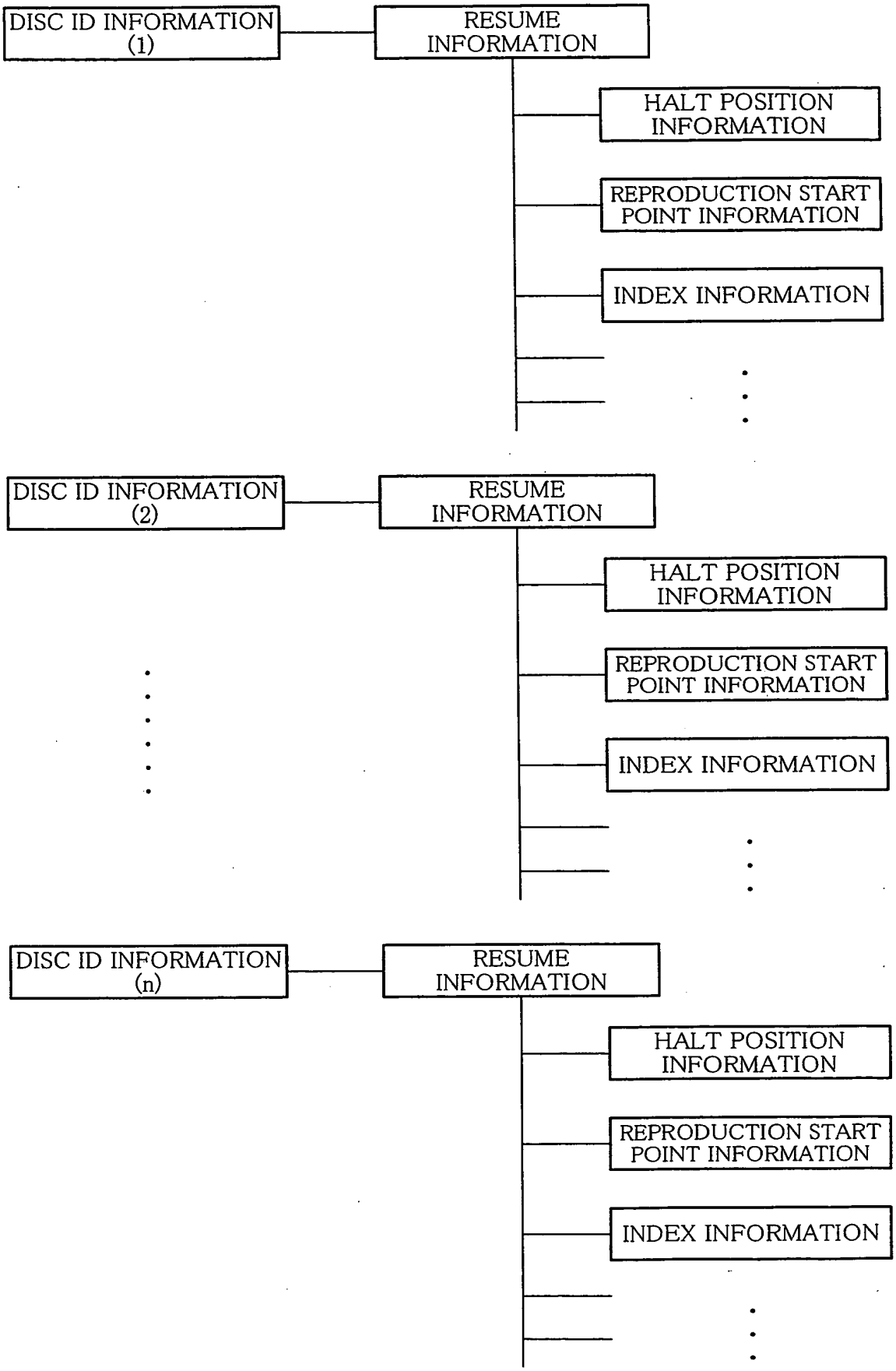

REPRODUCTION HALT POINT
DESIGNATED TIME (DEVIATION TIME)
REPRODUCTION START POINT
TIME CODE
SCENE
STORAGE LOCATION ADDRESS
T1
T2
T3
T4
T5
T6
T7
T8
T9
....
V1
V2
V3
V4
V5
V6
V7
V8
V9
....
DA1
DA2
DA3
DA4
DA5
DA6
DA7
DA8
DA9
....

FIG. 12


DISC ID INFORMATION (1)
RESUME INFORMATION
HALT POSITION INFORMATION
REPRODUCTION START POINT INFORMATION
INDEX INFORMATION
DISC ID INFORMATION (2)
RESUME INFORMATION
HALT POSITION INFORMATION
REPRODUCTION START POINT INFORMATION
INDEX INFORMATION
DISC ID INFORMATION (n)
RESUME INFORMATION
HALT POSITION INFORMATION
REPRODUCTION START POINT INFORMATION
INDEX INFORMATION